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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 10/525,798 | 02/25/2005 | Akira Hommi | 12699/18 | 3010 |

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| EXAMINER | |
|---|---|
| SMITH, TYRONE W | |

| ART UNIT | PAPER NUMBER |
|---|---|
| 2837 | |

DATE MAILED: 11/01/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

| Office Action Summary | Application No. | Applicant(s) | |
|---|---|---|---|
| | 10/525,798 | HOMMI ET AL. | |
| | Examiner | Art Unit | |
| | Tyrone W. Smith | 2837 | |

*-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --*

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

1)☐ Responsive to communication(s) filed on _____.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

4)☒ Claim(s) 1-14 and 18-20 is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) 1-14 and 18-20 is/are rejected.

7)☒ Claim(s) 15-17 is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

**Application Papers**

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date 2/25/05.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

## DETAILED ACTION

### Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. Claims 1-14 and 18-20 rejected under 35 U.S.C. 103(a) as being unpatentable over Tabata et al (JP10-304514) in view Tezuka (5195037).

Regarding Claims 1, 8, 12 and 18. Tabata discloses drive force controlling device for hybrid vehicle, which includes an angular acceleration measurement module that measures an angular acceleration of either of the drive shaft and a rotating shaft of the motor (Figure 2 item M) (section [0008] – section [0011]); a first skid detection module that detects a skid due to wheel spin of the drive wheels, based on the measured angular acceleration (section [0008] – section [0011]); a first torque restriction control module that, in response to detection of a skid by the first skid detection module restricts torque output and controls said motor with the restricted torque output, so as to reduce the skid (section [0008] – section [0011]); a first integration module that integrates the angular acceleration, which is measured by the angular acceleration measurement module to give a time integration thereof since detection of the skid by the first skid detection module (section [0008] – section [0011]). Refer to the abstract and sections [0082] – [0094]. However, Tabata does not disclose a first torque restoration control module or similar that, in response to at least a reducing tendency of the skid, restores the torque output, and controls the motor with the restored torque output.

Tezuka discloses torque distribution control for a four-wheel drive motor which includes a first torque restoration control module/torque resetting means (column 9 lines 26-30) that, in response to at least a reducing tendency of the skid, restores the torque output and controls the motor with the restored torque output (column 9 lines 31-34). Refer to column 7 lines 51-68 and column 8 lines 1-41. Further, restores output torque level at a predetermined timing when the angular acceleration measured by said angular acceleration measurement module has an increase in the course of convergence of the skid. Refer to column 7 lines 51-68 and column 8 lines 1-41.

It would have been obvious to one of ordinary skill in the art at the time of invention to use Tabata's drive force controlling device for hybrid vehicle with Tezuka's torque distribution control for a four-wheel drive motor. The advantage of combining the two would provide a system, which may ensure driving stability and steering in accordance with slip or skid conditions.

Regarding Claims 2 and 13. Tabata teaches a predetermined timing represents a change timing of the measured angular acceleration from negative to positive. Further, Tabata teaches a first integration module that integrates the angular acceleration, which is measured by the angular acceleration measurement module to give a time integration thereof since detection of the skid by the first skid detection module (section [0008] – section [0011]). Refer to the abstract and sections [0082] – [0094].

It would have been obvious to one of ordinary skill in the art at the time of invention to use Tabata's drive force controlling device for hybrid vehicle with Tezuka's torque distribution control for a four-wheel drive motor. The advantage of combining the two would provide a system, which may ensure driving stability and steering in accordance with slip or skid conditions.

Regarding Claims 3, 14, 19 and 20. Tezuka discloses torque distribution control for a four-wheel drive motor which includes a first torque restoration control module/torque resetting means (column 9 lines 26-30) that, in response to at least a reducing tendency of the skid, restores the torque output and controls the motor with the restored torque output (column 9 lines 31-34). Refer to column 7 lines 51-68 and column 8 lines 1-41. Further, restores output torque level at a predetermined timing when the angular acceleration measured by said angular acceleration measurement module has an increase in the course of convergence of the skid. Refer to column 7 lines 51-68 and column 8 lines 1-41.

Regarding Claims 4-7. Tabata discloses drive force controlling device for hybrid vehicle, which includes an angular acceleration measurement module that measures an angular acceleration of either of the drive shaft and a rotating shaft of the motor (Figure 2 item M) (section [0008] – section [0011]); a first skid detection module that detects a skid due to wheel spin of the drive wheels, based on the measured angular acceleration (section [0008] – section [0011]); a first torque restriction control module that, in response to detection of a skid by the first skid detection module restricts torque output and controls said motor with the restricted torque output, so as to reduce the skid (section [0008] – section [0011]); a first integration module that integrates the angular acceleration, which is measured by the angular acceleration measurement module to give a time integration thereof since detection of the skid by the first skid detection module (section [0008] – section [0011]). Refer to the abstract and sections [0082] – [0094]. However, Tabata does not disclose a first torque restoration control module or similar that, in response to at least a reducing tendency of the skid, restores the torque output, and controls the motor with the restored torque output.

Tezuka discloses torque distribution control for a four-wheel drive motor which includes a first torque restoration control module/torque resetting means (column 9 lines 26-30) that, in

response to at least a reducing tendency of the skid, restores the torque output and controls the motor with the restored torque output (column 9 lines 31-34). Refer to column 7 lines 51-68 and column 8 lines 1-41. Further, restores output torque level at a predetermined timing when the angular acceleration measured by said angular acceleration measurement module has an increase in the course of convergence of the skid. Refer to column 7 lines 51-68 and column 8 lines 1-41.

Tabata and Tezuka do not indicate another torque restriction control module being used in the invention.

In re Harza, 274 F.2d 669, 124 USPQ 378 (CCPA 1960) (Claims at issue were directed to a water-tight masonry structure wherein a water seal of flexible material fills the joints which form between adjacent pours of concrete. The claimed water seal has a "web" which lies ** in the joint, and a plurality of "ribs" ** >projecting outwardly from each side of the web into one of the adjacent concrete slabs. <The prior art disclosed a flexible water stop for preventing passage of water between masses of concrete in the shape of a plus sign (+). Although the reference did not disclose a plurality of ribs, the court held that mere duplication of parts has no patentable significance unless a new and unexpected result is produced.).

It would have been obvious to one of ordinary skill in the art at the time of invention to add another torque restriction module to the inventions of Tabata and Tezuka. The advantage would provide a better system, which may ensure driving stability and steering in accordance with slip or skid conditions.

Regarding Claims 9 and 10. Tabata discloses drive force controlling device for hybrid vehicle, which includes an angular acceleration measurement module that measures an angular acceleration of either of the drive shaft and a rotating shaft of the motor (Figure 2 item M) (section [0008] – section [0011]); a first skid detection module that detects a skid due to wheel

spin of the drive wheels, based on the measured angular acceleration and detects the occurrence of a skid when the measured angular acceleration exceeds a predetermined threshold value (section [0008] – section [0011]); a first torque restriction control module that, in response to detection of a skid by the first skid detection module restricts torque output and controls said motor with the restricted torque output, so as to reduce the skid (section [0008] – section [0011]); a first integration module that integrates the angular acceleration, which is measured by the angular acceleration measurement module to give a time integration thereof since detection of the skid by the first skid detection module (section [0008] – section [0011]).

It would have been obvious to one of ordinary skill in the art at the time of invention to use Tabata's drive force controlling device for hybrid vehicle with Tezuka's torque distribution control for a four-wheel drive motor. The advantage of combining the two would provide a system, which may ensure driving stability and steering in accordance with slip or skid conditions.

## Allowable Subject Matter

3. Claims 15-17 objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

## Conclusion

4. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Pertinent art related to control steering or anti-lock braking is disclosed in the PTO-892.

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tyrone W. Smith whose telephone number is 571-272-2075. The examiner can normally be reached on weekdays from 8:30am to 5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Martin, can be reached on 571-272-2075. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Tyrone Smith
Patent Examiner

Art Unit 2837

MARLON T. FLETCHER
PRIMARY EXAMINER